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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/965,072	09/27/2001	John Barry Fitzgerald	57.0373	2697

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Intellectual Property Law Department
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EXAMINER

GABOR, OTILIA

ART UNIT

2878

PAPER NUMBER

DATE MAILED: 10/14/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/965,072

Applicant(s)

FITZGERALD, JOHN BARRY

Examiner

Otilia Gabor

Art Unit

2878

-- Th MAILING DATE of this communication appears on the cover sheet with the correspondent address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 August 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-22 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 September 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s) _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other: _____

Response to Amendment

1. The amendments filed 08/11/2003 have been entered.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1-3, 7-11, 14-15, 17-22 are rejected under 35 U.S.C. 102(b) as being anticipated by Gadeken (U. S. Patent 6037585).

Gadeken discloses an apparatus and method for determining the radioactive scale distribution using a gamma radiation logging technique whereby the position and quantity of scale present in the formation and near the borehole is calculated in-situ in a logging well system. The apparatus comprises:

- a test formation 10 including an annular formation 12, a cement annulus 14, a casing 16 and a central borehole 18 containing:
 - o a gamma radiation detector that detects the gamma rays emitted from the radioactive isotopes present in the scale and also the gamma rays emitted from the radioactive tracers present in the well. The gamma detector will generate a gamma-ray spectrum of the isotopes present in the scale in real-time;

- o a signal processor which is positioned above ground and which obtains in real-time the coded spectra from the gamma detector and which spectroscopically analyses the spectrum and based on the finding it calculates the quantity, the distribution and the concentration (i.e. abundance) of each isotope present in the scale. Based on these calculations the position and the quantity of the scale are generated.

See Figs. 1-3.

The detector is stationary and is permanently installed in the borehole 18, which is cemented to the well borehole casing through the cement annulus 14. The measurements are done on the scale located in the well formation or around the downhole (production well) and the main component of the scale is radium. The spectrum is obtained in-situ periodically. The amount of radium originally deposited as a tracer is also found.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 4-6, 13, 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gadeken.

Regarding claims 4, 5 and 16 Gadeken fails to explicitly disclose that the

permeability of the scale is determined, however since the concentration, the amount and distribution of its components as well as the concentration, amount and position of the scale itself is calculated determining the permeability of the scale it's an obvious step to take when important parameters of the scale are being determined, for it allows for determination of the actual formation permeability.

Regarding claim 6 Gadeken uses as an example a scale with radium as the primary component however he does not limit the method to a specific type of scale. As such taking the spectroscopic measurements on scale that has barium as the primary component would have been obvious to one of ordinary skill in the art, for it is well known in the art that a type of scale that forms in wells has barium as the primary component.

Regarding claim 13 Gadeken discloses that the spectra is taken periodically, but he does not specify the time period as every ten minutes, however taking the spectra every ten minutes would have been obvious to one of ordinary skill in the art at the time the invention was made since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 220 F.2d 454, 105 USPQ 233, 235 (CCPA 1955).

6. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Gadeken and further in view of Seidner (U. S. Patent 4856584).

Gadeken uses a preferred method where the gamma detector is positioned in the

downhole below ground, however since he does not limit the configuration of the system positioning the gamma detector above ground would have been obvious to one of ordinary skill in the art at the time the invention was made since as disclosed by Seidner in order to monitor the downhole parameters such as scaling the gamma detector 16 can be conventionally positioned above the ground.

Response to Arguments

7. Applicant's arguments filed 08/11/2003 have been fully considered but they are not persuasive. The main argument presented by the Applicant is that the reference Gadeken (6,037,585) does not disclose deriving the physical quantity or mass of the scale based on the relative concentration of radium to other scale components. However, this argument is not persuasive since Gadeken clearly discloses the following steps: obtaining the gamma ray spectral data including the emissions from all radioactive tracers (i.e., spectra of all radioactive emissions); forming a matrix which includes the sensitivities of all radioactive emissions of gamma rays (not only the rays from radium), which sensitivity is dependent on the concentrations of the individual radioactive elements; and calculating the concentration of the radium based on this matrix, i.e., calculating the concentration of radium based on the concentrations of the other radioactive concentrations; and calculating the amount of scale based on the calculated amount of radium present. See claims 1 and 2 in Col.5. Also see the generation of matrix M in Col.4 and the calculation of radium concentration in Col.3. Since the calculation of radium concentration is taken relative to the concentration of the

other radioactive elements present in the scale formation, and the calculation of the total amount (quantity) of scale is dependent on the amount of radium present, it is clear that the claimed step of calculating the physical quantity of scale based on the relative concentration of radium to other scale components is present. The Applicant also emphasizes that the term "quantity of scale" in Gadeken does not mean a physical quantity or amount of scale but it is only the quantity of emissions from the scale. However, this argument is not persuasive since as clearly disclosed in Gadeken in claim 2, the method includes the calculating of the "amount of scale". Thus, unless the claim discloses that the "quantity of emissions from the scale are calculated", the plain meaning of the term "amount" and "quantity" is used which terms are ordinarily used to mean "weight" or "mass" of scale. Also, if Gadeken would only be interested in measuring the quantity of emissions from the scale, the extra step of claim 2 of measuring the "amount of scale" would not be necessary since the emissions from the radioactive components of the scale are already measured in the steps previous to that of claim 2.

Conclusion

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Otilia Gabor whose telephone number is 703-305-0384. The examiner can normally be reached on Monday-Friday between 8am-5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Porta can be reached on 703-308-4852. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

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